

TRAFFIC SAFETY DATA SERVICE

2001 Traffic Records Forum New Orleans, LA



Jerry Roche - FHWA
Reg Souleyrette - CTRE



Presentation Overview

- Background on Iowa
- Inception of the ITSDS
- Safety Analysis Tools
- Applications
- Selected Requests

Background on Iowa

Iowa Challenges:

- **~75,000 reported crashes**
 - ~100,000 drivers involved
 - ~35,000 personal injuries
 - ~3,000 serious injuries
 - ~490 fatalities
- **Extreme rural/urban mix**
- **No motorcycle helmet law**
- **0.10 BAC limit**
- **3rd highest percentage of drivers over age 65 and 2nd highest over age 75**



Safety Management Systems

- 1991 – ISTEA required states to have a safety management system
- 1995 – Iowa SMS is born
- 1997 – TEA-21 removes SMS mandate
- 1997 – Iowa one of only five states to keep its SMS

Iowa SMS

- Co-chaired by the Iowa Department of Transportation and the Iowa Governor's Traffic Safety Bureau
- Consists of members from the FIVE E's of Traffic Safety:
 - Engineering
 - Enforcement
 - Education
 - Emergency Response
 - ...Everyone Else!



Iowa SMS

- Development of the Highway Safety “Toolbox”
 - Tools vary from comprehensive engineering strategies to education and awareness programs



**Iowa Strategic
Highway Safety Plan**

Engineering, Enforcement, Education, Emergency Response &... Everyone else

Interagency Cooperation

- an Iowa Initiative

- Iowa Department of Transportation
- Iowa Governor's Traffic Safety Bureau
- Iowa Department of Public Health
- Center for Transportation Res & Ed
- Federal Highway Administration
- Federal Motor Carrier Administration
- National Highway Traffic Safety Admin.
- Iowa State Patrol
- Iowa Sheriffs and Deputies Association
- City Police Departments
- Iowa County Engineer's Association
- American Public Works Association
- Iowa Traffic Control and Safety Assoc.
- Iowa Northland Council of Govt.
- American Assoc. of Retired Persons
- AAA – Iowa/Minnesota
- State Farm Insurance
- Iowa Interstate Railroad



**Iowa Strategic
Highway Safety Plan**

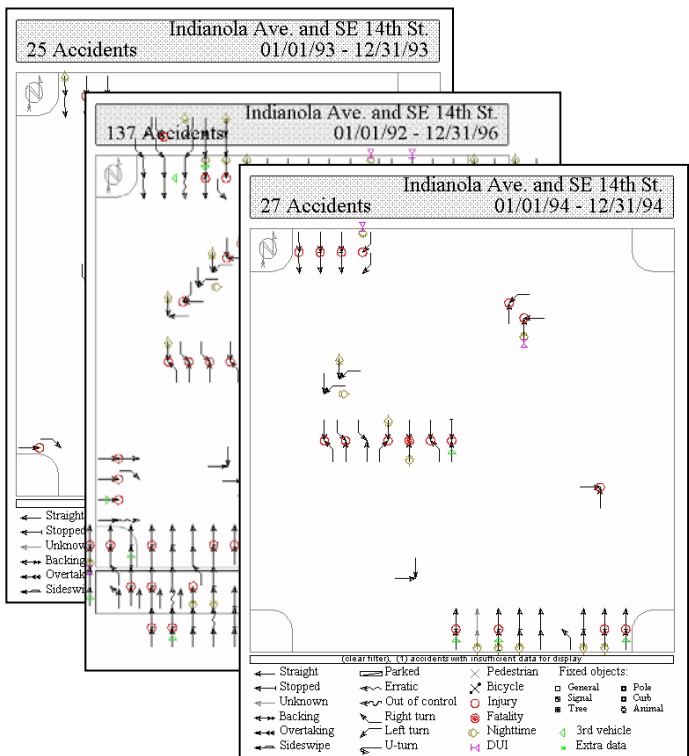
Engineering, Enforcement, Education, Emergency Response &... Everyone else

Inception of the ITSDS

- Began in the summer of 1999
- Funded by the Iowa GTSB and Iowa DOT
- Many safety analysis tools had just been released
- SMS committee determined that decision makers would initially need somewhere to go to retrieve these valuable safety data
- Continues to evolve as new information/safety tools become available and as our clientele grow

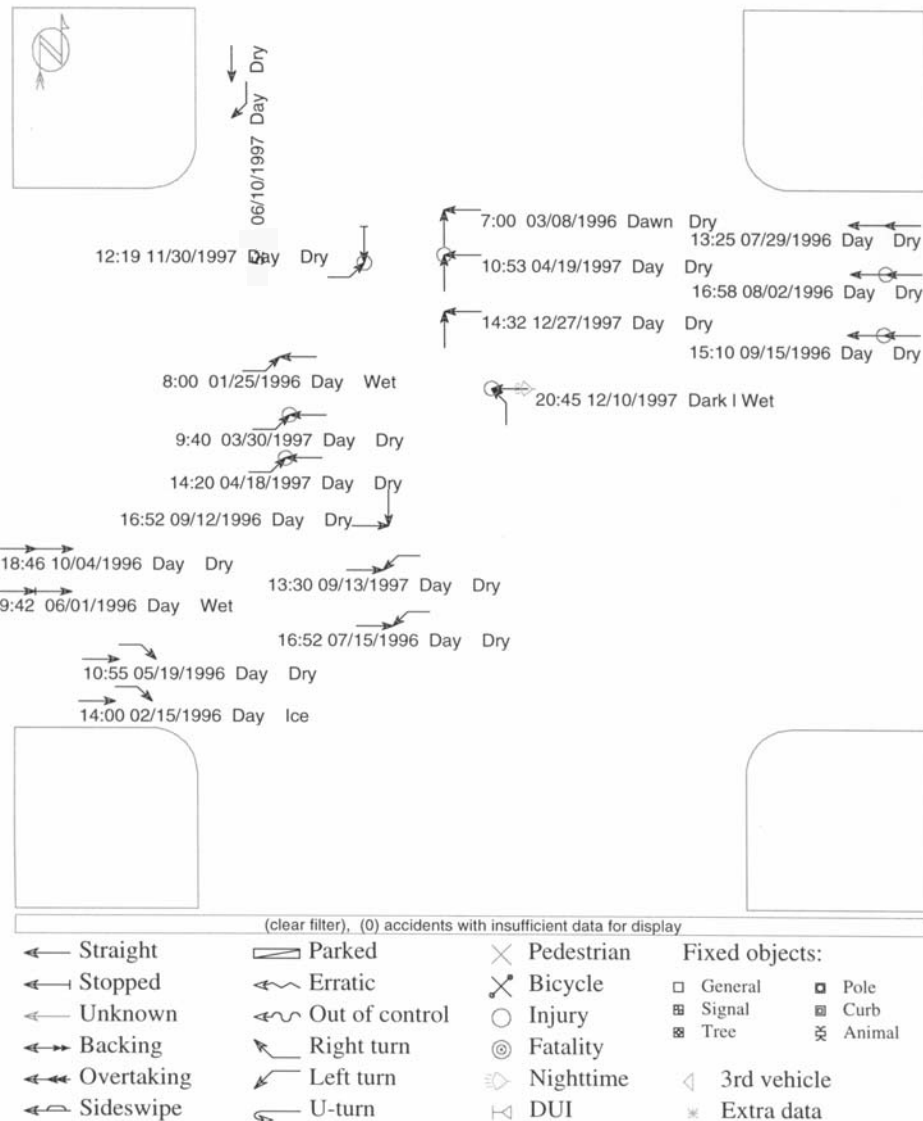
Safety Analysis Tools

Tool #2: Intersection Magic

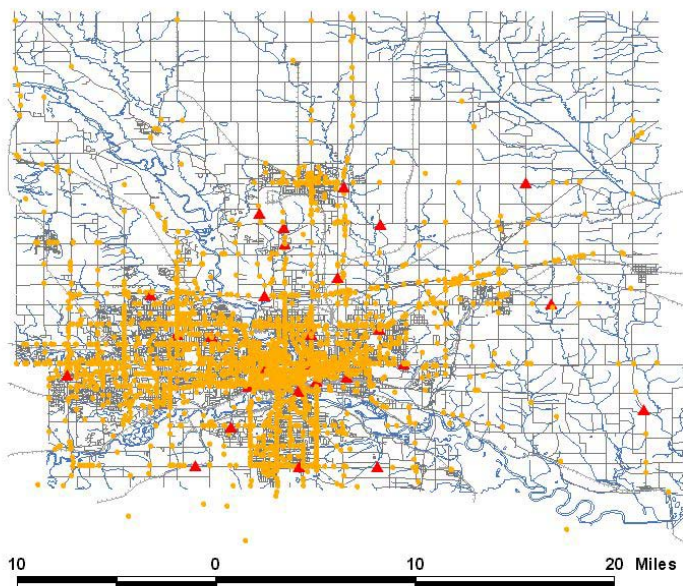


Collision Diagram

Lincoln Way and Clark Avenue/Walnut Street
20 Accidents
01/01/96 - 12/31/97

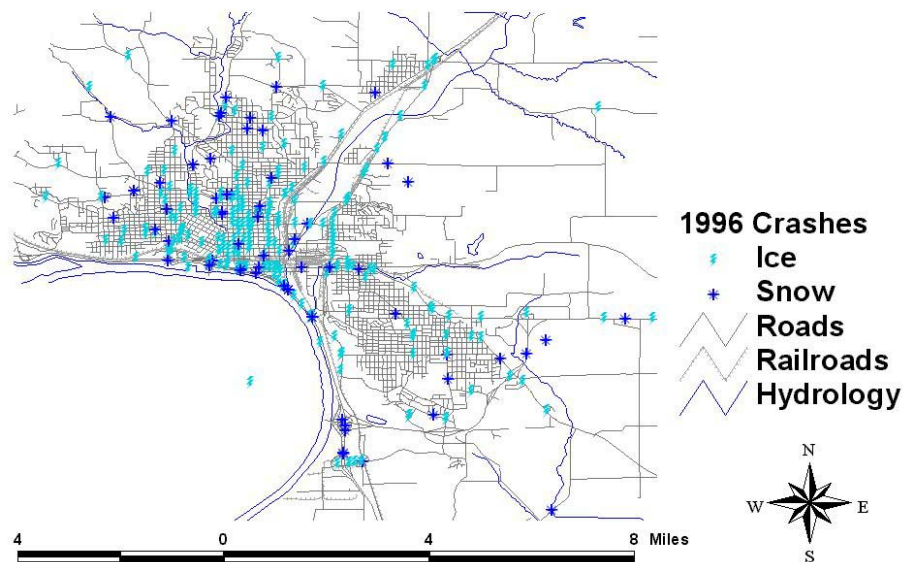


Polk County Fatal and Personal Injury Crashes, 1996

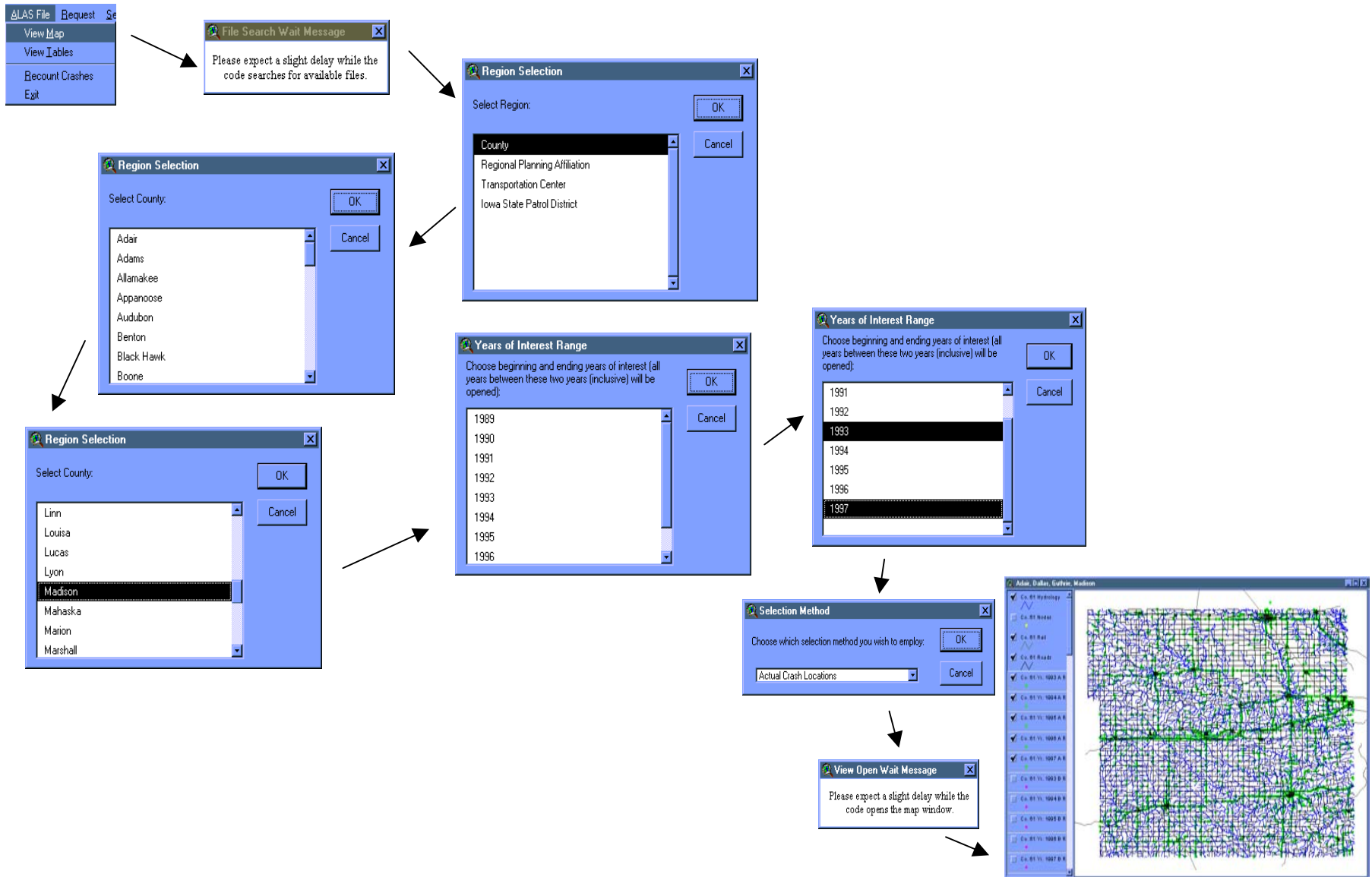


Tool #3: ArcView GIS

Woodbury County Crashes Related to Surface Condition, 1996



Tool #4: GIS-ALAS



So Many Tools...

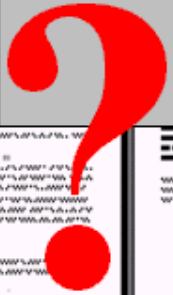
(so little time!)

Data Name	Actual Name	Values	What it means
Fire_explo	Fire/Explosion	0 Unknown	
		1 None	
		2 Yes	
Hit_and_ru	Hit and Run	0 Unknown	
		1 None	
		2 With Motor Vehicle	
		3 With Non-Occupant	
		4 Driver Left Scene	
Point_init	Point of Initial Impact	0 Unknown	
		1 Front	
		2 Right Front	

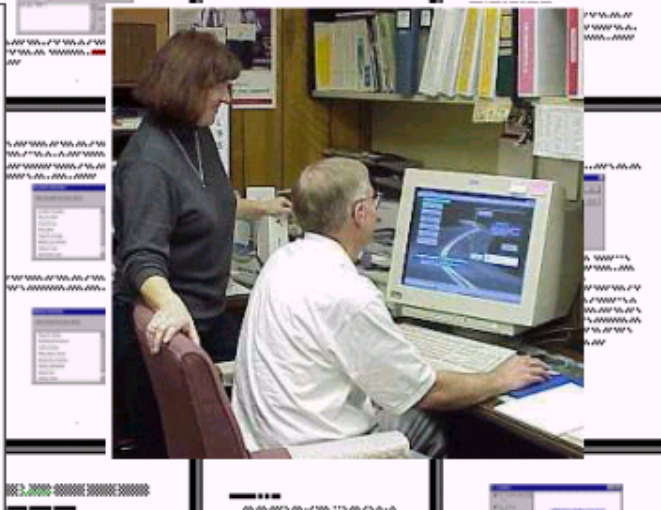
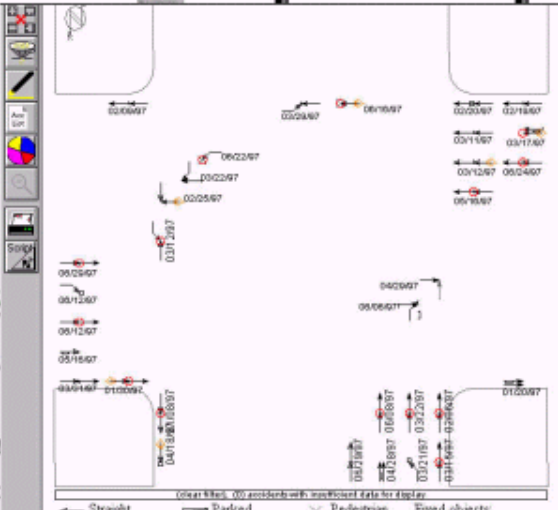
1995 Iowa Crash Facts

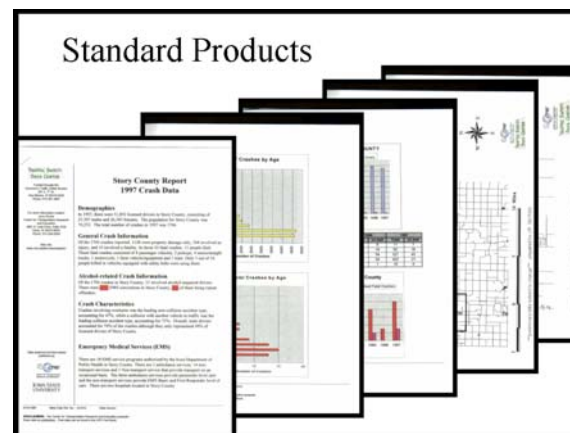
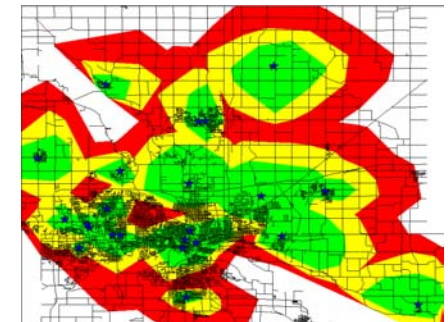
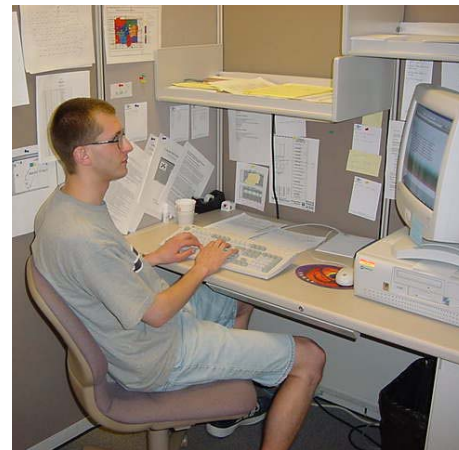
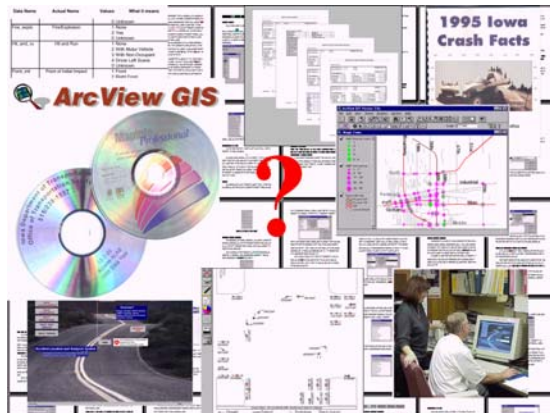


ArcView GIS

TMI...Too Much Information!



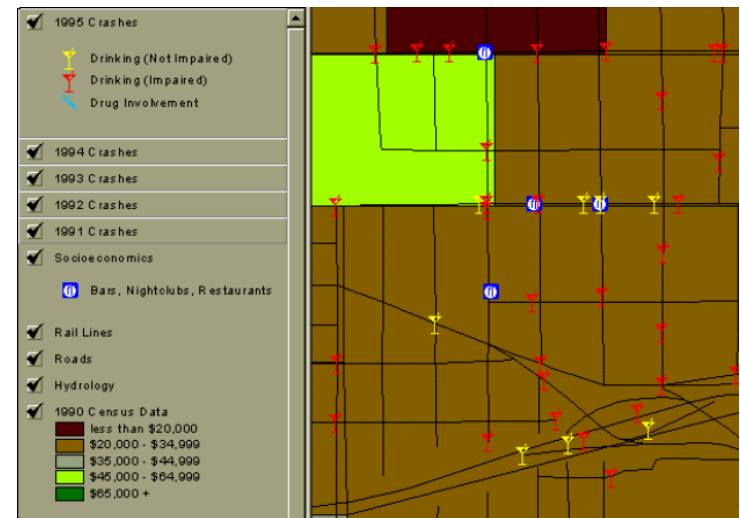
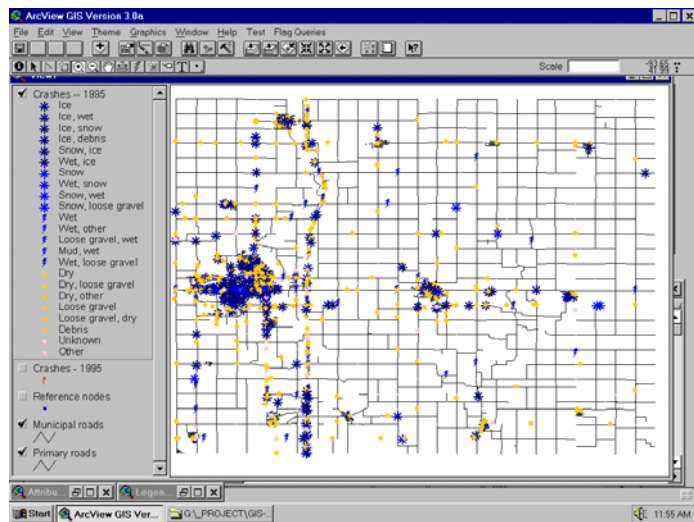
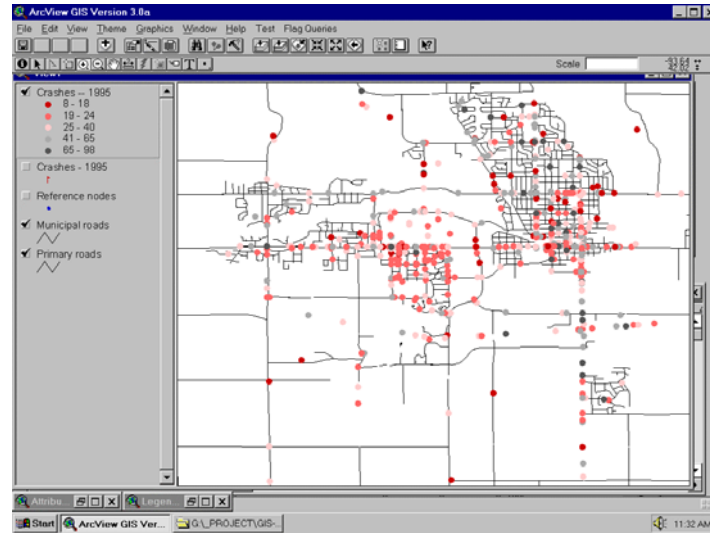
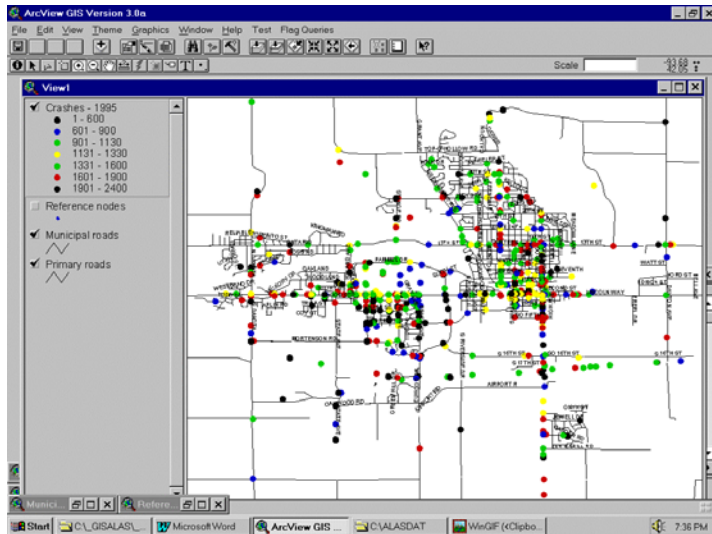


Our Customers

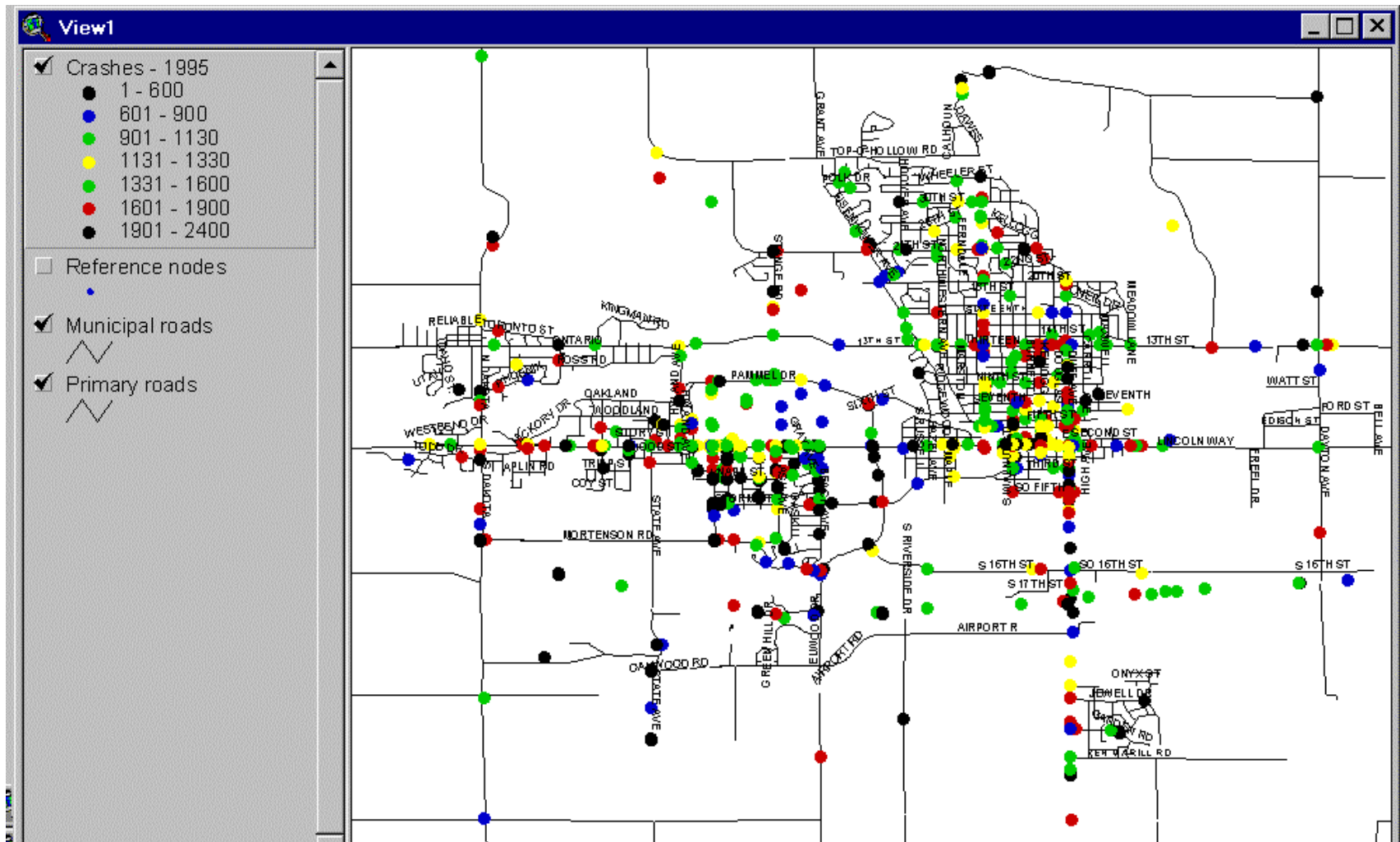
- Iowa Governor's Traffic Safety Bureau
- Iowa Department of Transportation
- Iowa Department of Public Health
- Federal Highway Administration
- Iowa County Engineers
- City Traffic Engineers
- Iowa State Patrol
- County Sheriff Offices
- City Police Departments
- Universities
- Consulting Firms
- Concerned Citizens
- Students
- Media
- etc., etc., etc...

Some Applications

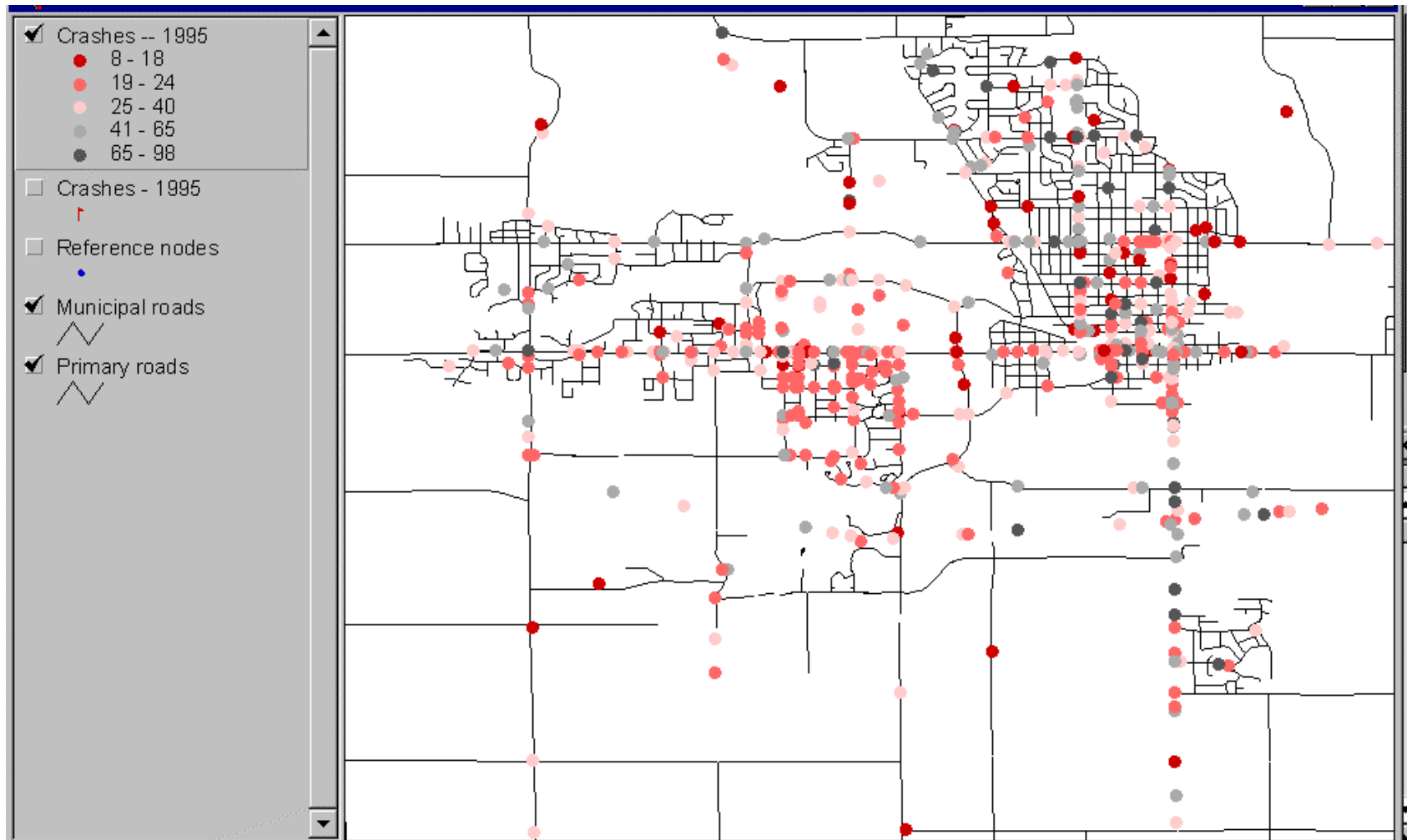
GIS: Thematic Maps



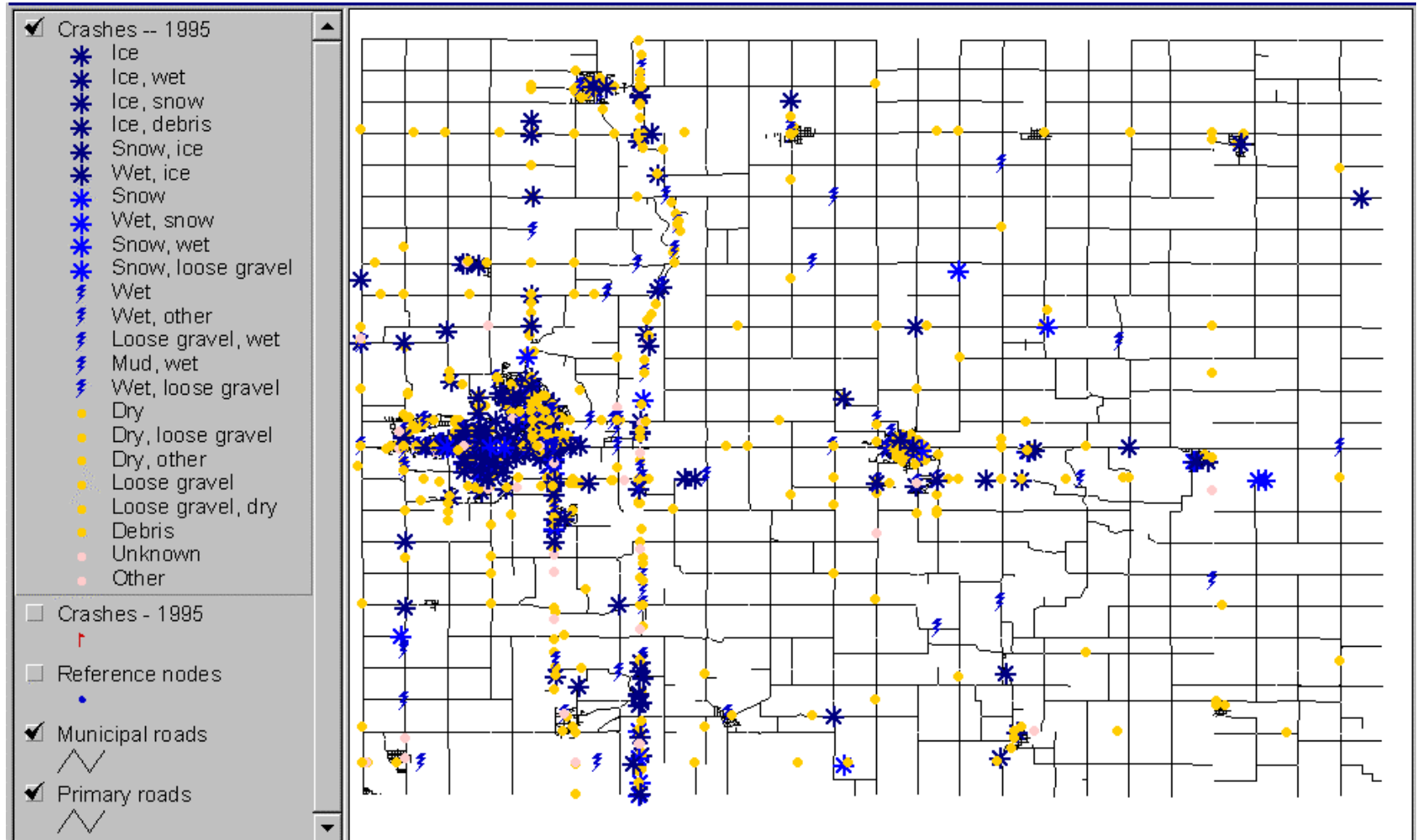
Crashes by Time of Day



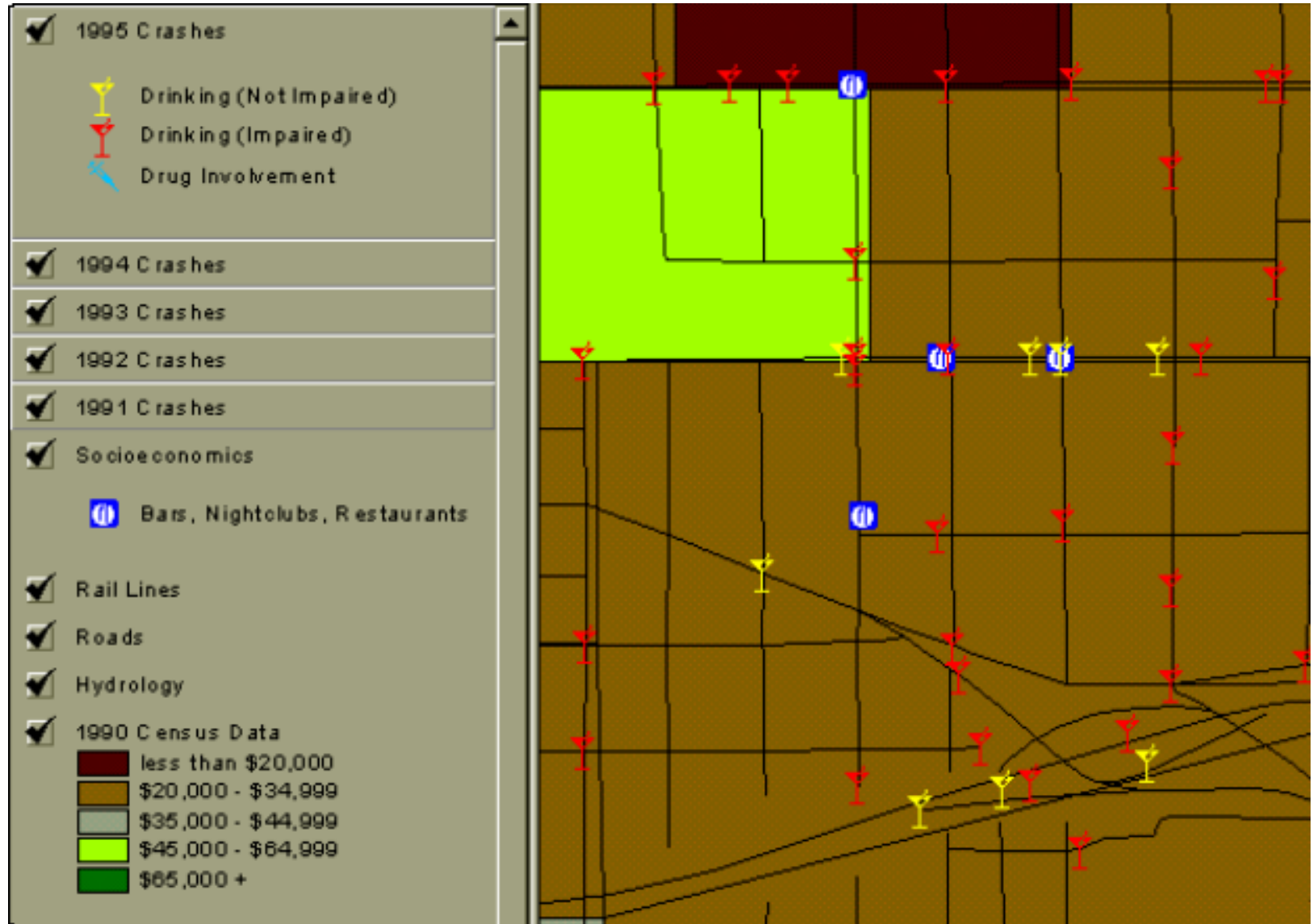
Crashes by Age



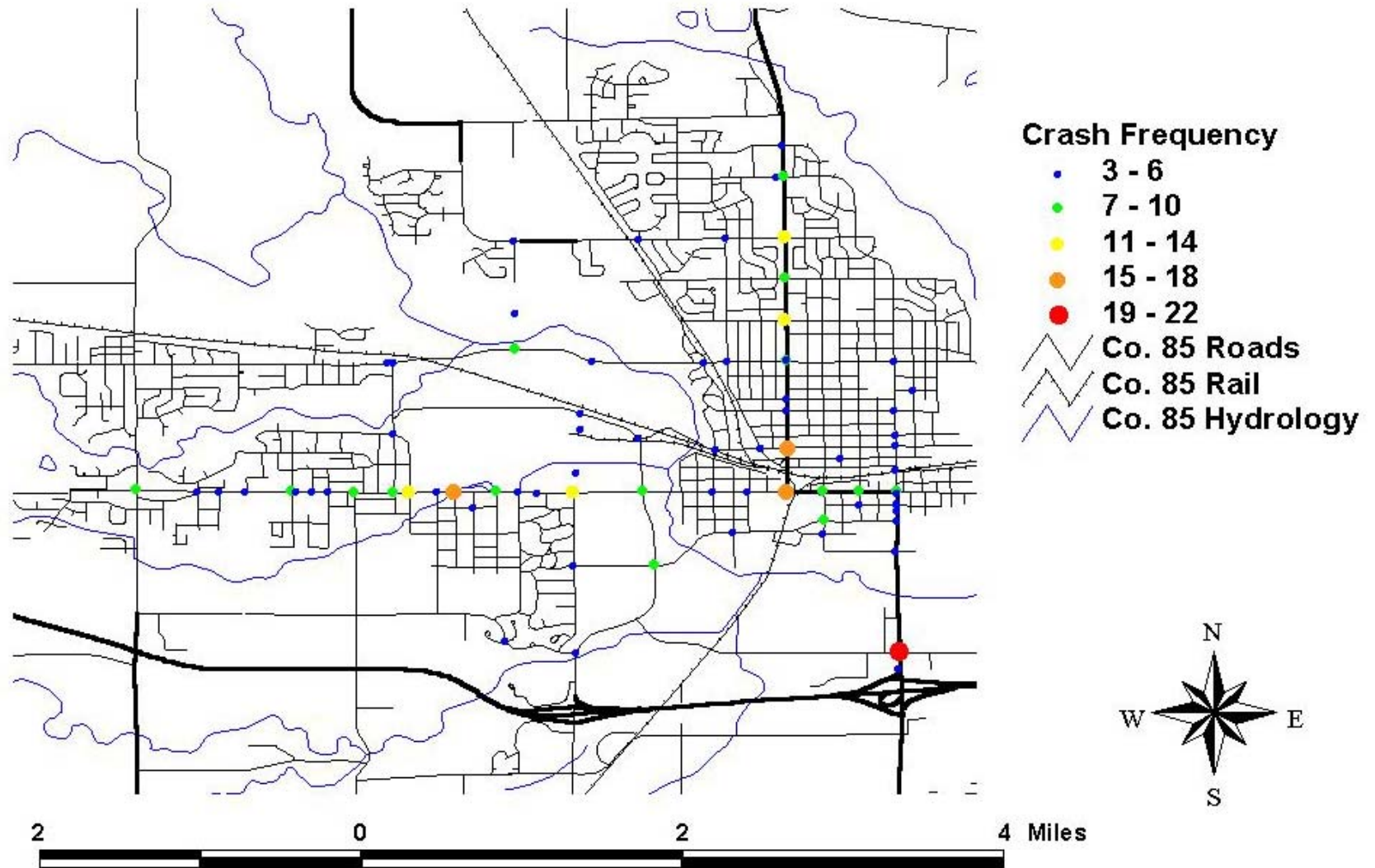
Crashes by Road Surface Conditions



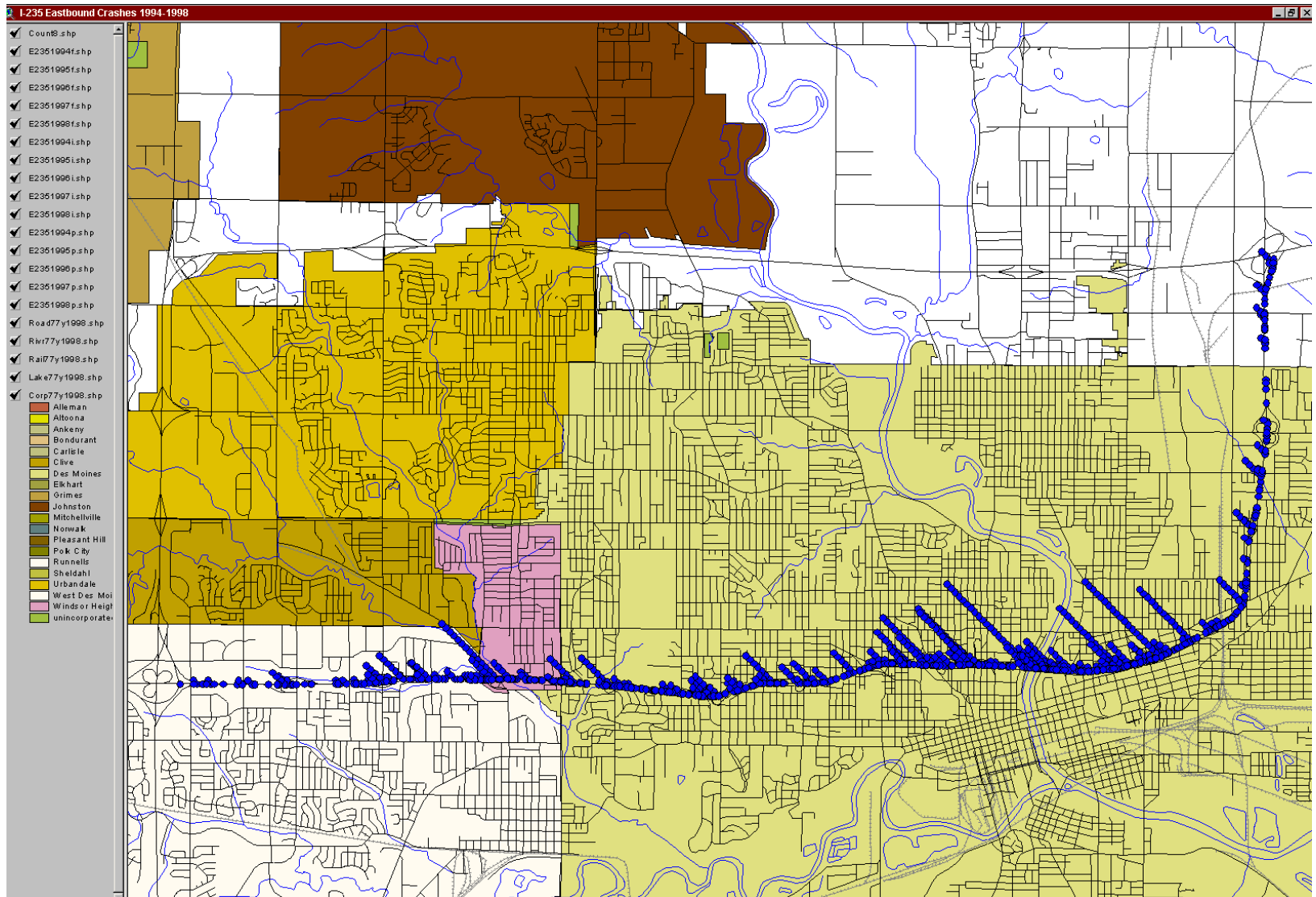
Drug and Alcohol Related Crashes



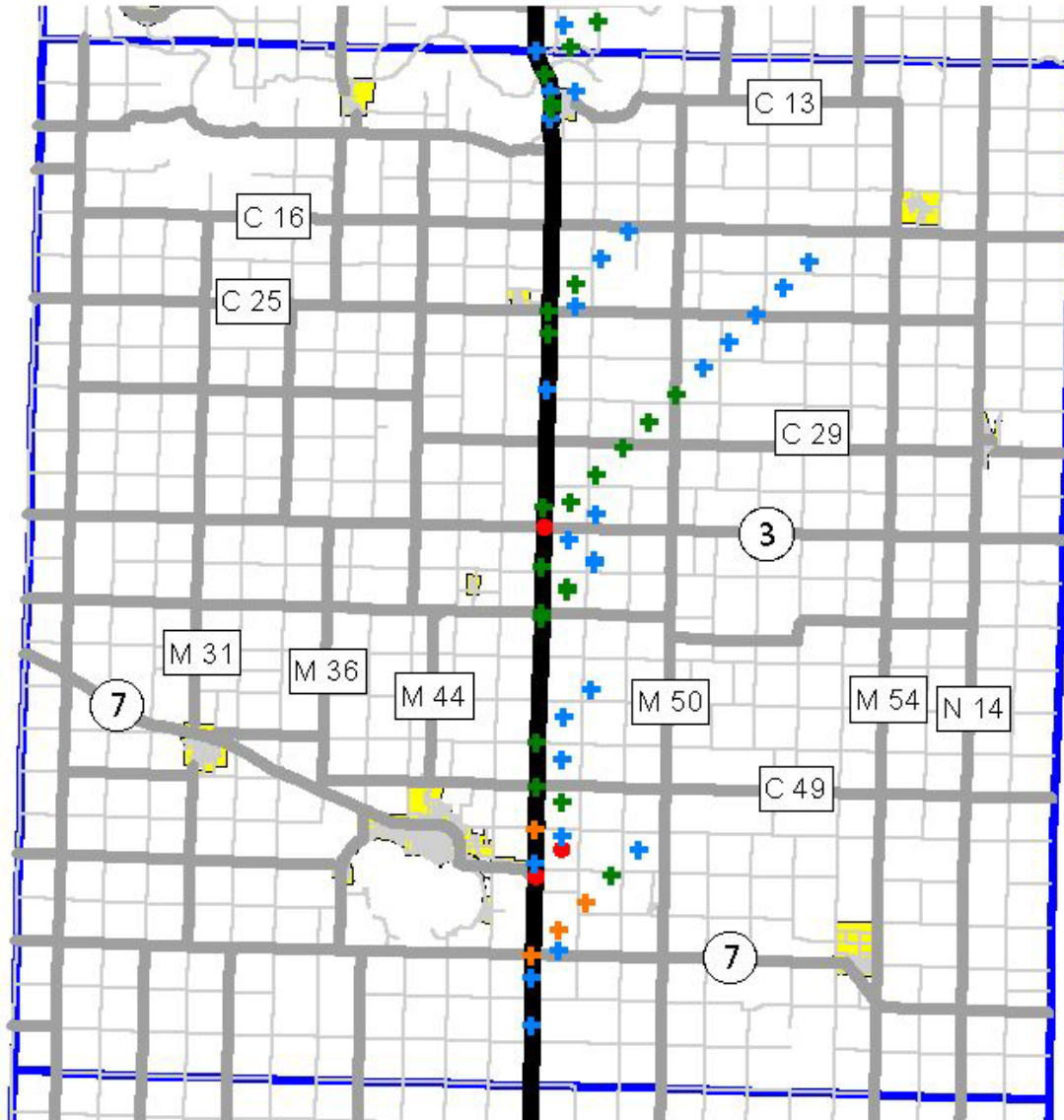
GIS: Crash Frequency (pin map)



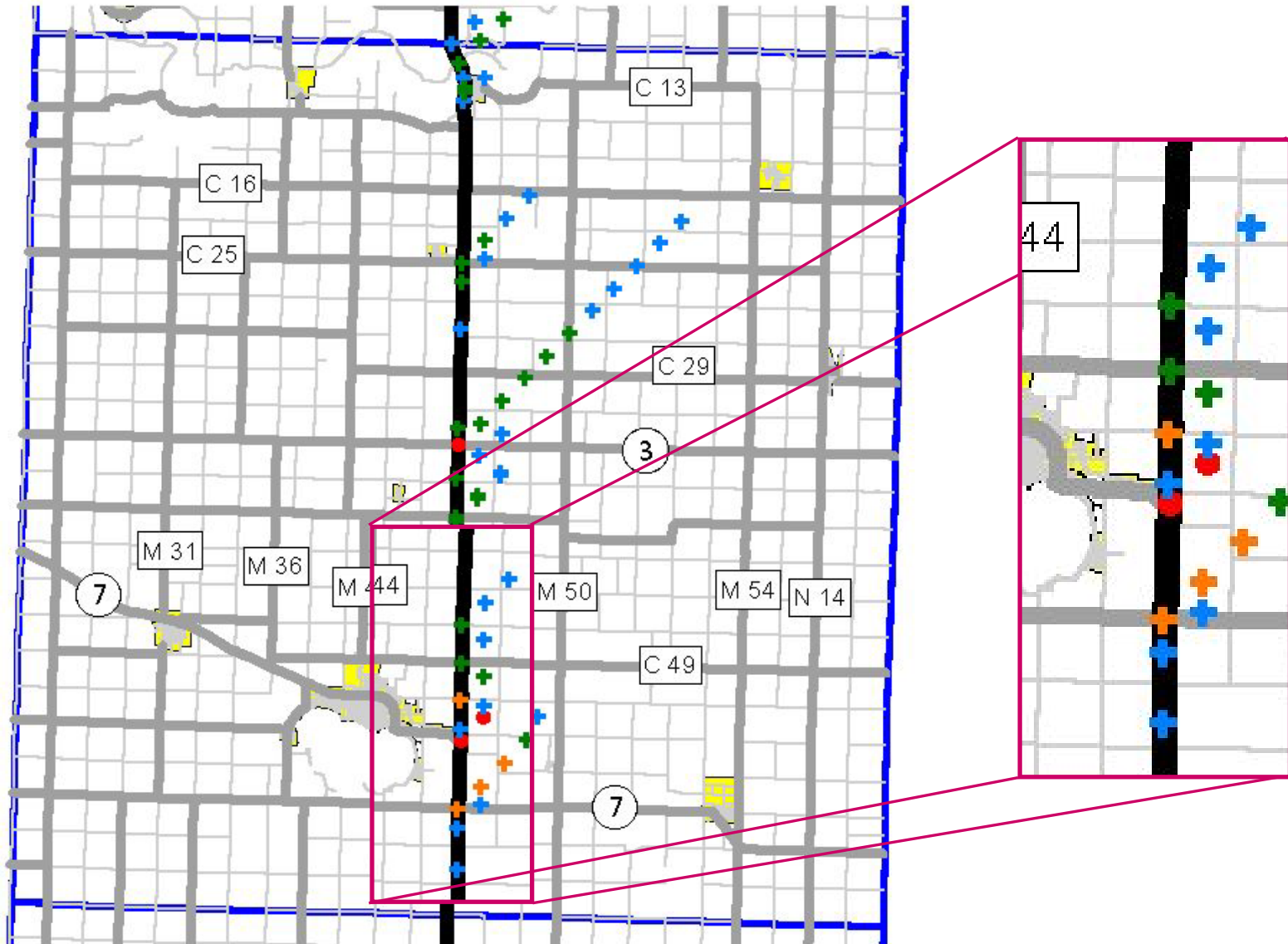
GIS-ALAS: Corridor Crash Frequency (stacked)



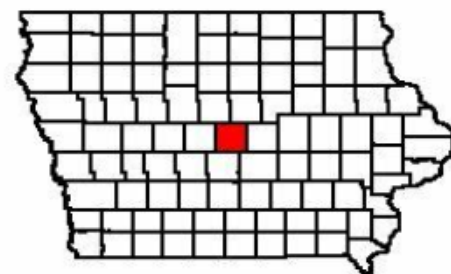
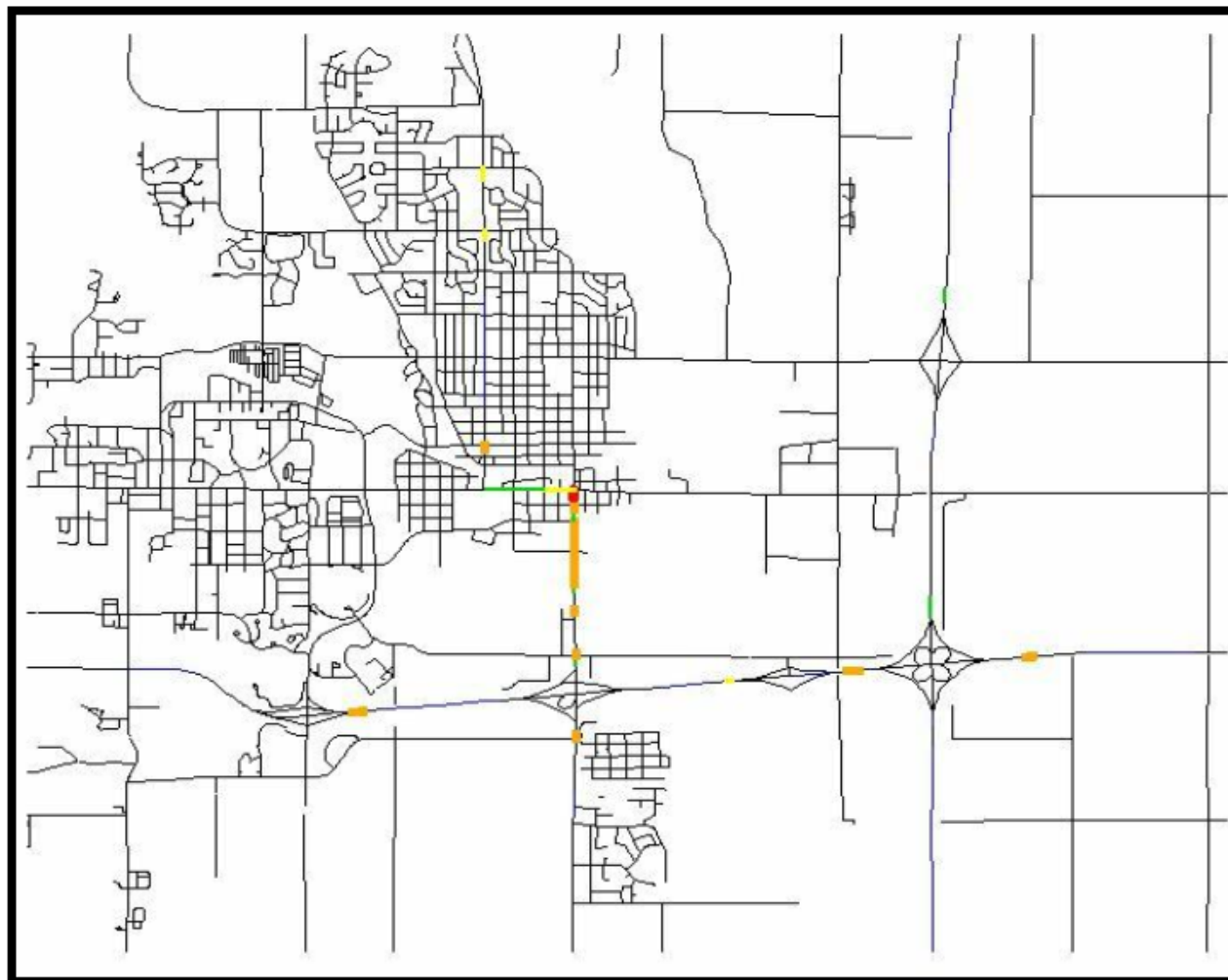
Injury Frequency by Severity



Injury Frequency by Severity



GIS: Link Crash Rates



Crash Rates on Major Roads



Center for Transportation
Research and Education

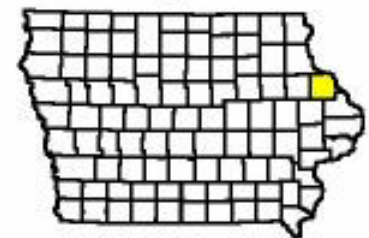
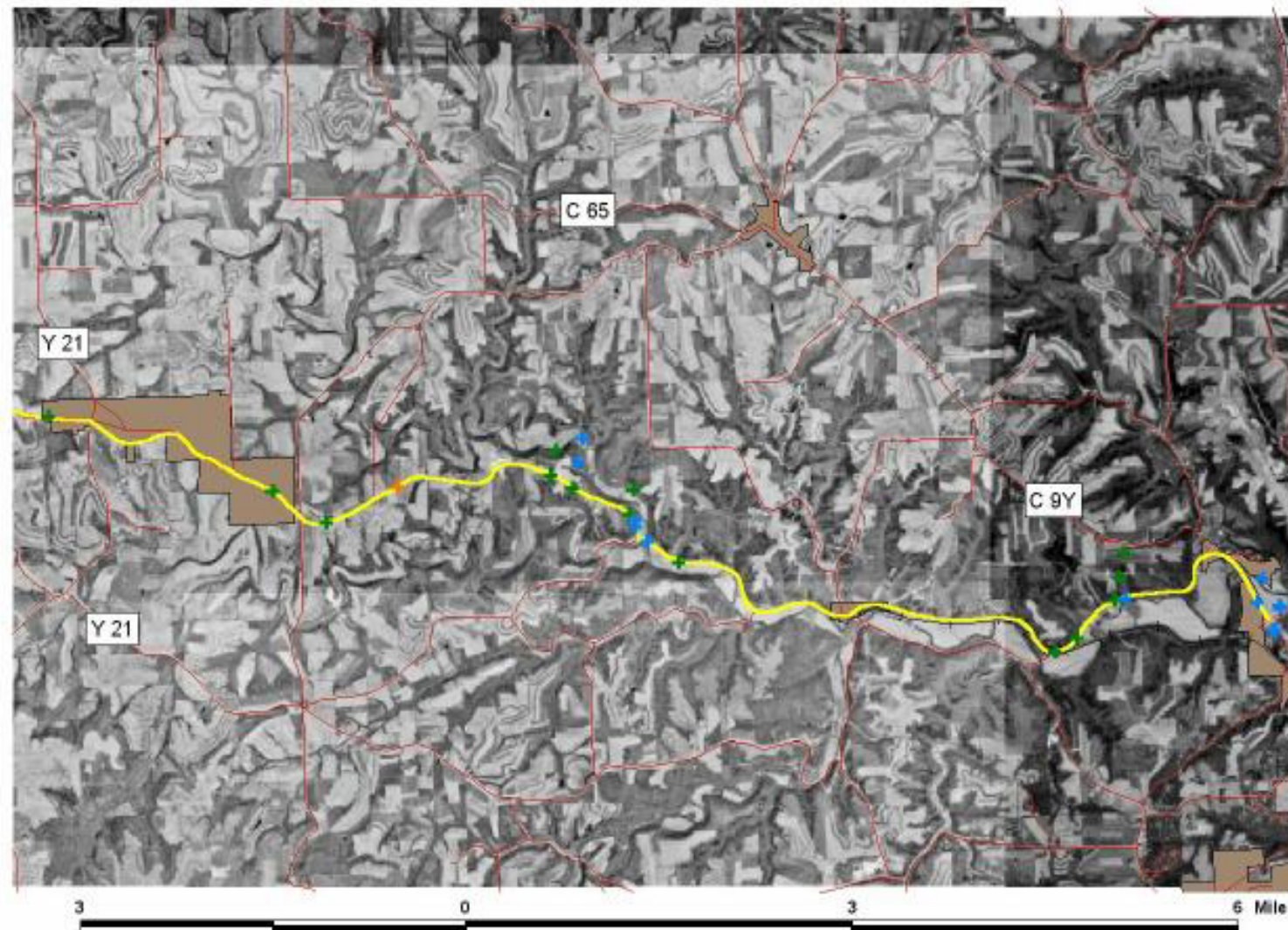
**TRAFFIC SAFETY
DATA SERVICE**

GIS: Integration of Roadway and Crash Data



Some Selected Requests

US Highway 52 Crashes



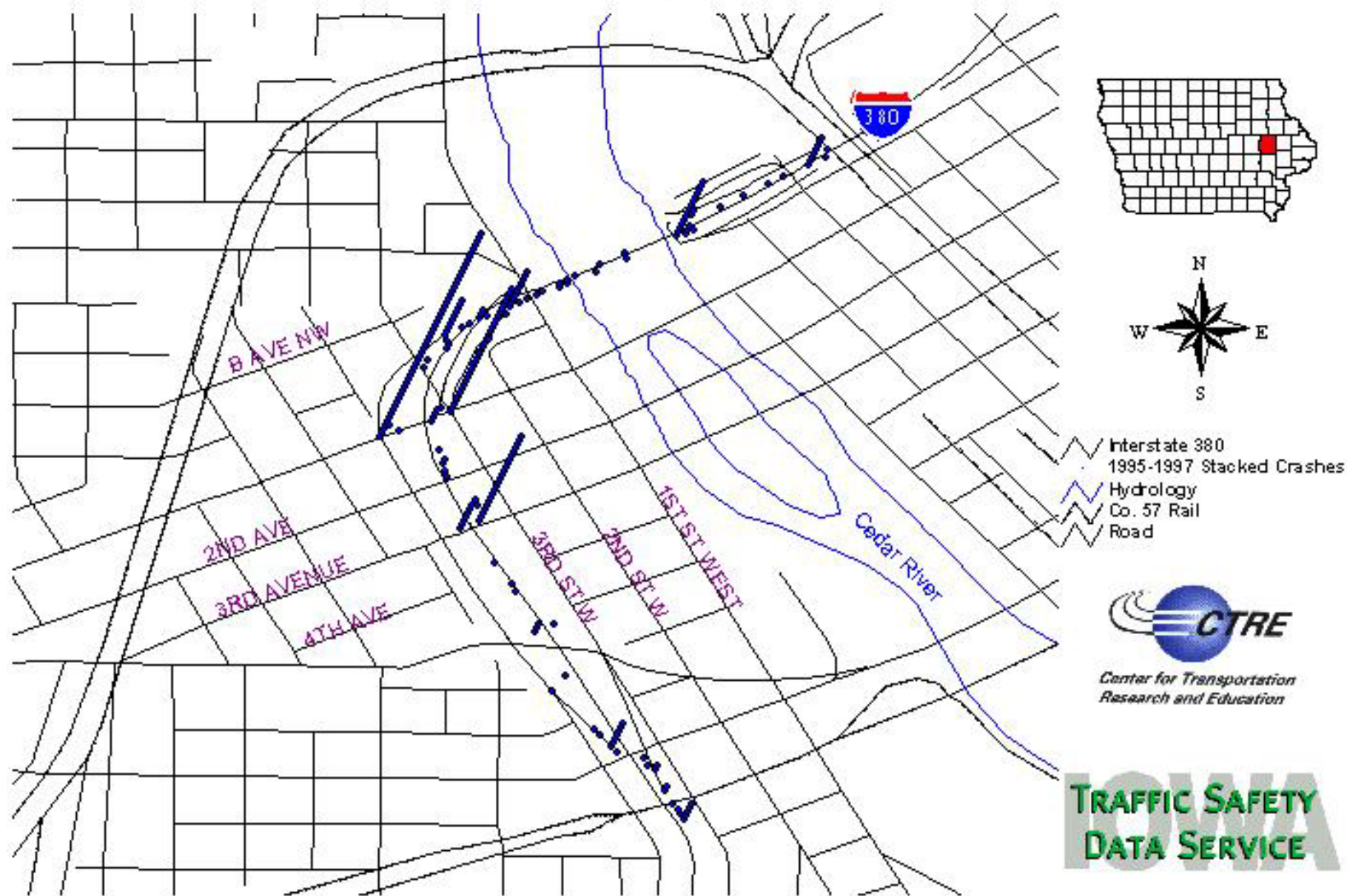
1997-1999 US 52 Stacked Crashes

- Fatal Injury (0)
- Major Injury (1)
- Minor Injury (14)
- Possible/Unknown Injury (13)
- US 52
- Roads
- Major Roads
- Rail
- Corporate Boundaries

**TRAFFIC SAFETY
DATA SERVICE**

*** Preliminary data subject to change, prepared by J.R. 4/17/01, reference # 000010 ***

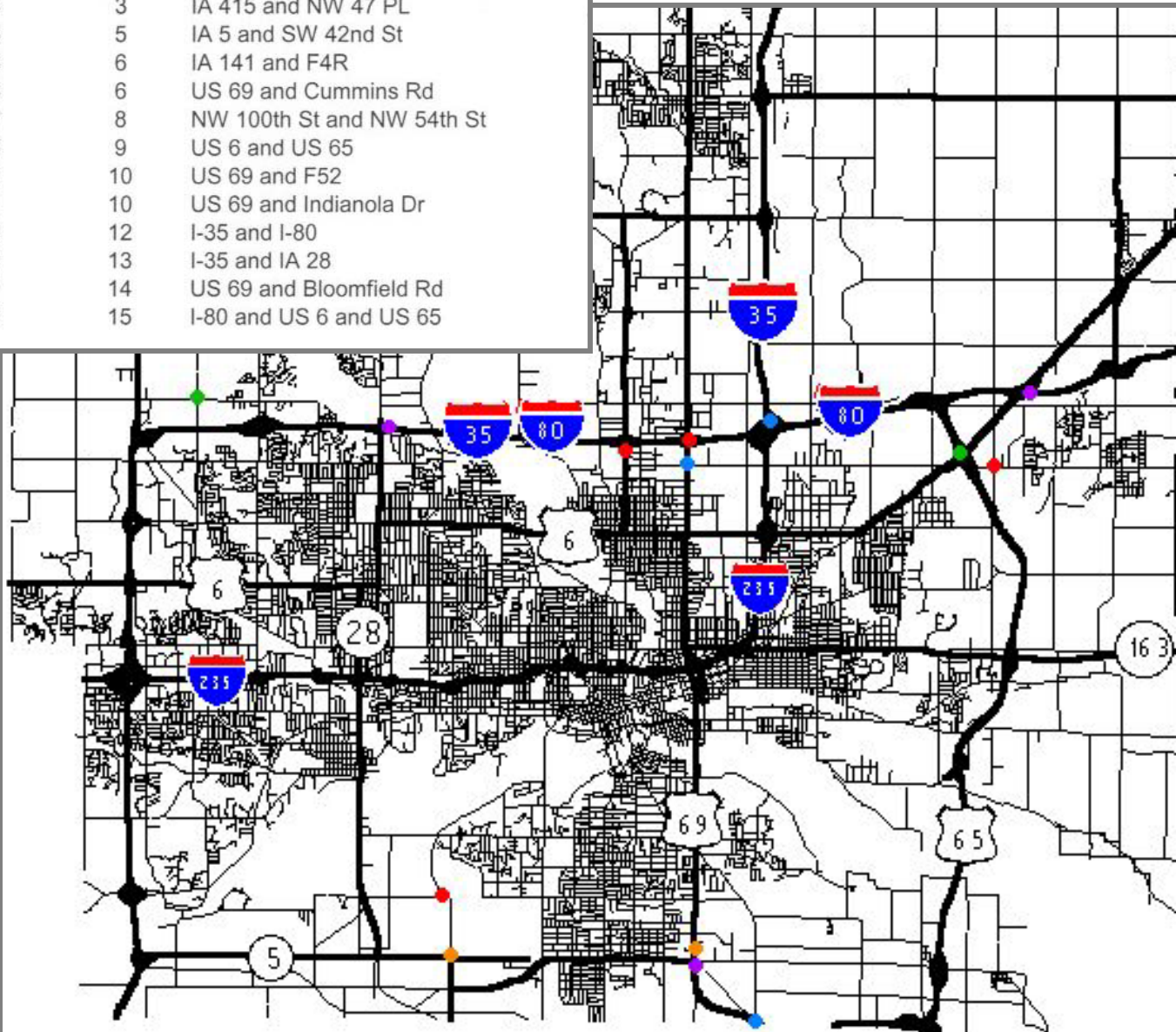
I-380 Snow and Ice Crashes Elevated Section Cedar Rapids, IA



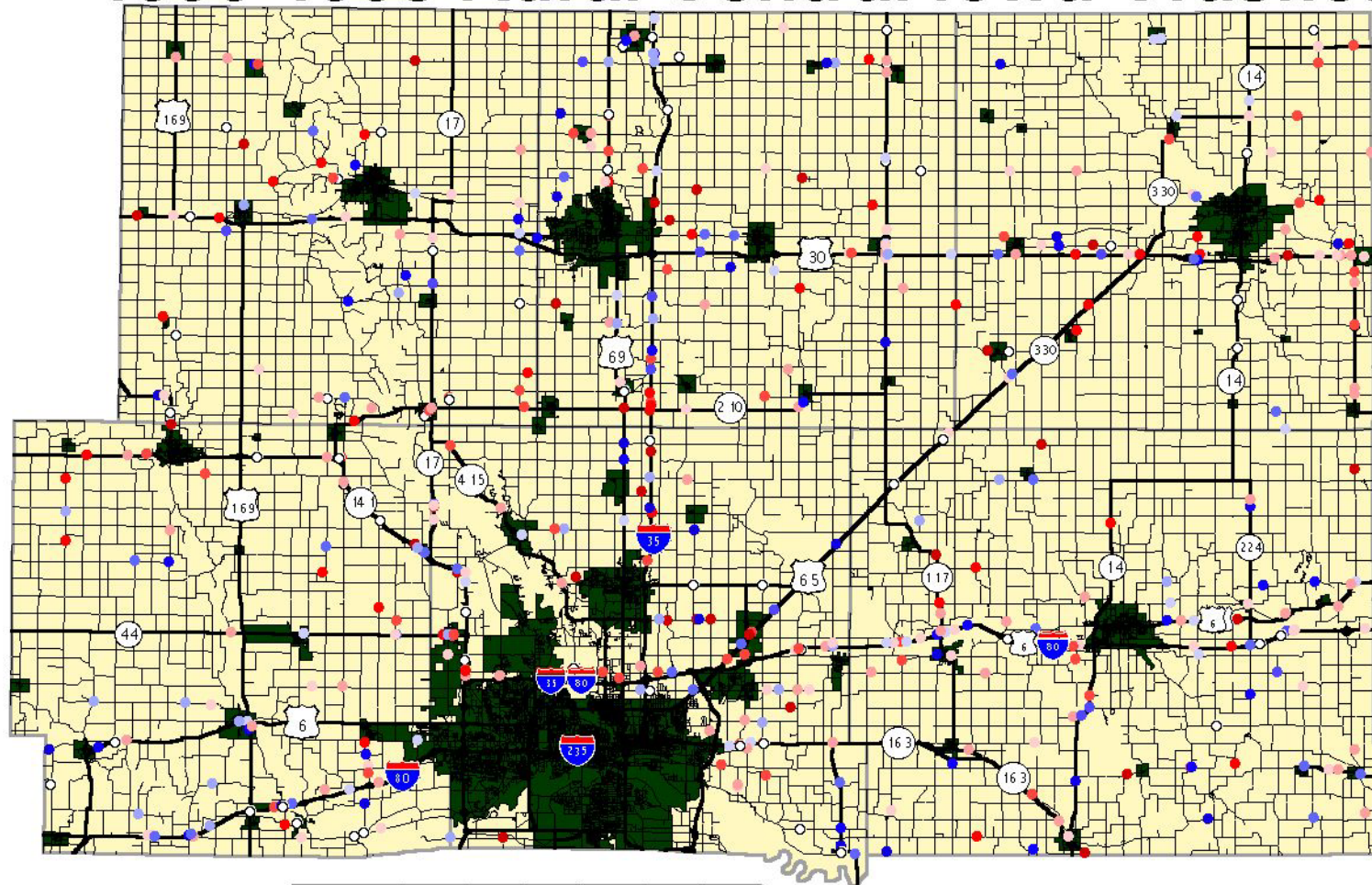
Frequency Rank	Crash Rate Rank	Loss Rank	Sum Ranking	Overall Rank	Intersection Description
3	1	5	9	1	SW Mckinnley Ave and SW 46th S
3	5	3	11	2	NE 56th St and 8th St SW
1	12	1	14	3	I-35/80 and US 69
3	7	4	14	3	IA 415 and NW 47 PL
3	4	8	15	5	IA 5 and SW 42nd St
3	6	7	16	6	IA 141 and F4R
3	11	2	16	6	US 69 and Cummins Rd
3	2	12	17	8	NW 100th St and NW 54th St
3	3	13	19	9	US 6 and US 65
2	8	11	21	10	US 69 and F52
3	10	8	21	10	US 69 and Indianola Dr
3	13	6	22	12	I-35 and I-80
3	14	8	25	13	I-35 and IA 28
3	9	15	27	14	US 69 and Bloomfield Rd
3	15	14	32	15	I-80 and US 6 and US 65

Non-illuminated
Intersection Crash
Ranking

Polk County
Engineering



1996-1998 Rural Central Iowa Crashes



Roads
 Major Roads
 Corporate Boundaries
 County Boundaries

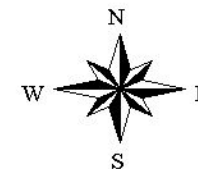
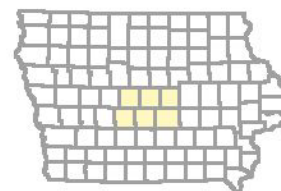
Time of Day

1996-1998 Rural Central Iowa Crashes

- 00:01 - 1:59 AM (31)
- 2:00 - 3:59 AM (45)
- 4:00 - 5:59 AM (39)
- 6:00 - 7:59 AM (39)
- 8:00 - 9:59 AM (39)
- 10:00 - 11:59 AM (38)

- 12:00 - 1:59 PM (88)
- 2:00 - 3:59 PM (78)
- 4:00 - 5:59 PM (83)
- 6:00 - 7:59 PM (80)
- 8:00 - 9:59 PM (48)
- 10:00 - 11:59 PM (37)
- Unknown (5)

Time	Boone	Dallas	Jasper	Marshall	Polk	Story
12:00-1:59 AM	2	5	5	4	2	7
2:00-3:59 AM	5	4	11	3	2	5
4:00-5:59 AM	2	0	5	1	2	4
6:00-7:59 AM	4	9	6	6	11	2
8:00-9:59 AM	3	9	4	8	12	11
10:00-11:59 AM	2	7	10	5	6	7
12:00-1:59 PM	12	13	2	2	14	11
2:00-3:59 PM	8	11	10	16	12	12
4:00-5:59 PM	2	14	22	12	16	10
6:00-7:59 PM	2	6	2	8	20	8
8:00-9:59 PM	7	10	7	10	4	2



**TRAFFIC SAFETY
DATA SERVICE**

1989-1998 Crash and Injury

Severe
Information

Produced by

TRAFFIC
DATA SERVICE

With assistance

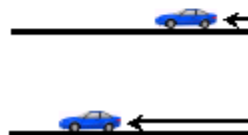


Governor's Traffic Safety Bureau

Iowa Crash Fact Sheet

Speed Facts

- During 1999, excessive speed or driving too fast for conditions was cited as a contributing factor in 47 of Iowa's 425 fatal crashes (11% of fatal crashes).
- Speed ranks behind only alcohol and stop sign/stop light violations as a contributing factor in fatal crashes in Iowa. Nationally, speed ranks
- In 1997, overall fatality rates for the 26 states averaged 1.92 per 100 million VMT or less, a difference of more than 20%.
- When a vehicle travels at 55 mph, the stopping distance is 204 feet. If the speed of the vehicle goes to 60 mph, the stopping distance increases to 264 feet (illustrated below). An 18% increase in speed results in a 30% increase in stopping distance.



Contributing Factors to Fatal Crashes



Produced by the Governor's Traffic Safety Bureau

TRAFFIC SAFETY DATA SERVICE

Funded through the
Governor's Traffic Safety Bureau
679 E. 2nd St.
Des Moines, IA 50319
Phone: 515-281-3907

For more information contact:
Jenny Roche
Traffic Safety Data Coordinator
Center for Transportation Research and
Education
2901 S. Loop Drive, Suite 3100
Ames, IA 50010-8632
Phone: 515-294-5004

Web site: www.ctre.iastate.edu/tlds/



Various Reports

Council Bluffs Interstate Crashes 1990-1999

Year	Interstate-29 Crashes Mileposts: 47-58	Interstate-80 Crashes Mileposts: 1-8
1990	82	77
1991	77	93
1992	79	116
1993	102	150
1994	82	124
1995	84	123
1996	101	181
1997	135	152
1998	86	164
1999	106	177

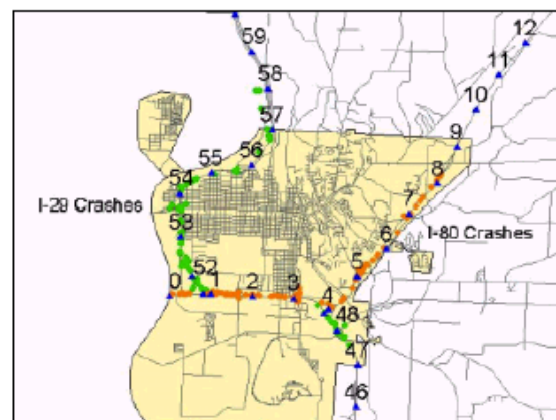


Figure 1. Crash assignment: east-west crashes were considered as occurring on Interstate-80


Hotline: (515) 294-5004

Iowa Traffic Safety Data Service (ITSDS) - Microsoft Internet Explorer


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Address <http://www.ctre.iastate.edu/itsds/index.htm> Go Links



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Funded by the Iowa Governor's Traffic Safety Bureau, the Iowa DOT, and the Iowa Department of Public Health

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CONTACT INFO
CTRE
ISU Research Park
2901 S. Loop Dr.
Suite 3100
Ames, IA 50010

Phone
515-294-8103
Fax
515-294-0467

Webmaster:
mregenol@iastate.edu

Online Reports & Analyses Available


The Iowa Traffic Safety Data Service (ITSDS) provides timely access to crash analyses and reports from many safety and geographic information systems tools developed by the [Iowa Department of Transportation](#) and [CTRE](#) in recent years. The ITSDS facilitates decision making, effective presentation of information, and education.

ITSDS wants to make data about traffic safety in Iowa as easily accessible as possible. Therefore, we have completed projects and reports available online.

Region specific reports are organized by county, and may be selected by using the linked [Iowa State](#). All completed projects and reports are also organized by year requested: [1999](#) [2000](#) [2001](#)

A list of ITSDS's [current requests](#) is available online as well.

The ITSDS Service Team



In order to serve clients better, the ITSDS implemented a team approach to handle projects. This team will allow for more project collaboration and integration of backgrounds including Civil Engineering, Information Systems, Management Information Systems, and Transportation Engineering.


ITSDS Special Request Form - Netscape

File Edit View Go Communicator Help


Back Forward Reload Home Search Netscape Print Security Shop

Bookmarks Location <http://www.ctre.iastate.edu/itsds/request.cfm>

Instant Message CTRE Request Work Search Engines Michael RealPlayer



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Request form

To submit a special request for Iowa crash fact data, please submit the following online form, or call Jerry Roche, research assistant, at 515-294-5004.

Name:

Title:

Organization:

*Address:

*City:

County:

State:

*Zip Code:

Phone:

E-mail:

Brief description of your special request:

* Data are required in these areas

CTRE is an Iowa State University center.

E-mail: itsds@iastate.edu
Web: www.ctre.iastate.edu/itsds